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Beltraniomyces panthericolor and *B. pulcher* spp. nov. from Brazil

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Abstract—Two new *Beltraniomyces* species found on decaying leaves and wood in Brazil are described and illustrated. *Beltraniomyces panthericolor* is distinguished by biconic, brown conidia with multiple, irregular, dispersed, smoky to gray-brown spots that resemble leopard spots. *Beltraniomyces pulcher* is characterized by biconic conidia with rounded to subobtuse apices.

Key words—biodiversity, conidial fungi, hyphomycetes, *Pezizomycotina,* taxonomy

Introduction

Asexual fungi belong primarily to *Ascomycota* and are abundant in nature as decomposers of litter (Seifert & al. 2011). In Brazil, research involving asexual ascomycetous decomposers has concentrated in the Caatinga and Mata Atlântica biomes (Santa Izabel & Gusmão 2018, Barbosa & al. 2013). The monotypic genus *Beltraniomyces* Manohar. & al. was originally described from dead unidentified twigs in India and is characterized by macronematous, mononematous conidiophores with polyblastic, sympodial conidiogenous cells producing biconic conidia with central hyaline transverse bands (Manoharachary & al. 2003). The genus is typified by *B. lignicola* Manohar. & al., and no additional species have been described (Wijayawardene & al. 2017).

Two undescribed species resembling *Beltraniomyces* that were found during a survey of asexual fungi on decaying plants from Brazil are described and illustrated here. A key for the three *Beltraniomyces* species is also presented.

Materials & methods

Expeditions were made in Fazenda São Nicolau (Cotriguaçu, Mato Grosso), Parque Estadual Cristalino (Novo Mundo, Mato Grosso), and Brejo Paraibano (Areia, Paraíba) to collect leaf litter and wood debris. Samples were placed in paper bags, taken to the laboratory, and processed as described in Castañeda-Ruiz & al. (2016). Reproductive structures were placed on slide prepared with PVL resin (polyvinyl alcohol, lactic acid, and phenol), measured, and photographed using a microscope equipped with phase contrast. The type specimens were deposited in the Herbario Centro-Norte Mato-Grossense, Sinop, Mato Grosso, Brazil (CNMT), and Herbario Jayme Coelho de Moraes, Areia, Paraiba, Brazil (EAN).

Taxonomy

Beltraniomyces panthericolor L.A. Costa, G.G. Barreto, F.R. Barbosa, Fiuza, R.F. Castañeda, **sp. nov.** Fig. 1

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Differs from *Beltraniomyces lignicola* by its longer, brown conidia with multiple smoky or gray-brown spots covering the conidial body.

Type: Brazil, Paraiba State, Areia, Arboreto Jayme Coelho de Moraes, 7°02′04″S 35°48′28″W, on dead leaves of *Clusia* sp. (*Clusiaceae*), 20.IX.2018, coll. L.A. Costa (**Holotype**, EAN 26.231).

Etymology: Latin, *panthericolor*, referring to the brown conidia with multiple smoky or gray-brown spots, similar to the skin patterning of the leopard (*Panthera pardus*).

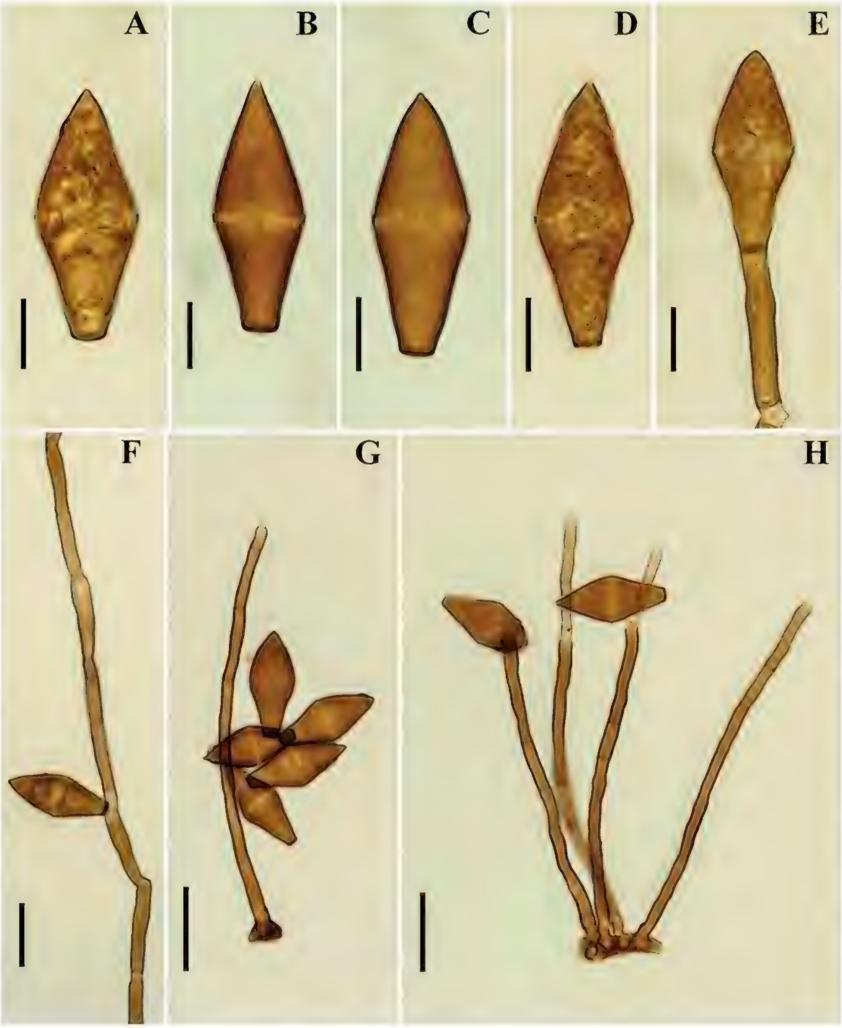

Fig. 1. *Beltraniomyces panthericolor* (holotype, EAN 26.231). A–D. Conidia; E. Conidiogenous cell and conidium; F. Conidiogenous cells and conidium; G. Conidiophore, conidiogenous cells, and conidia; H. Conidiophores in group, conidiogenous cells, and conidia. Scale bars: A–D = 10 µm; E = 20 µm; F–H = 40 µm.

Colonies scattered, dark brown. Mycelium superficial and immersed, composed of slightly branched, septate, smooth, pale brown to brown hyphae. Conidiophores macronematous, mononematous, erect, straight or flexuous, unbranched, geniculate, 5–25-septate, brown, smooth, 83–522

× 4–10 µm. CONIDIOGENOUS CELLS polyblastic, integrated, terminal and intercalary, brown to pale brown, with indeterminate, sympodial, percurrent extensions, ≤390 µm long. Conidial secession schizolytic. CONIDIA solitary, biconic, subulate to mucronate apex, cuneiform and truncate at the base, brown, with multiple, irregular, smoky to gray-brown spots covering the conidial body; median transversal band subhyaline, smooth, dry, 31–62(–45) × 15–22 µm.

COMMENTS—*Beltraniomyces lignicola* is distinguished by smooth biconic conidia that are acute at the apex and truncate at the base, subhyaline to pale brown, with a hyaline median transverse band, 31–38.5 × 19–24 µm (Manoharachary & al. 2003). *Beltraniomyces panthericolor* is easily distinguished from *B. lignicola* by conidial shape, pigmentation, and size.

Beltraniomyces pulcher F.R. Barbosa, Fiuza, G.C.K. Barbosa, R.F. Castañeda & Gusmão, **sp. nov.** FIG. 2

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Differs from *Beltraniomyces lignicola* by its rounded to subobtuse conidial apex.

TYPE: Brazil, Mato Grosso State, Cotriguaçú, 9°52′24″S 58°13′17″W, on decaying wood, 15.XII.2017, coll. G.C.K. Barbosa (**Holotype**, CNMTf 77).

ETYMOLOGY: Latin, *pulcher*, meaning beautiful.

COLONIES scattered, dark brown. Mycelium superficial and immersed, composed of slightly branched, septate, smooth, pale brown to brown hyphae. CONIDIOPHORES macronematous, mononematous, erect, straight or flexuous, unbranched, geniculate, 10–25-septate, brown, smooth, 450–750 × 6–12 µm. CONIDIOGENOUS CELLS polyblastic, integrated, terminal and intercalary, with indeterminate, sympodial, percurrent extensions, brown to pale brown, ≤300 µm long. Conidial secession schizolytic. CONIDIA solitary, biconic, rounded to subobtuse apex, truncate at the base, brown with a hyaline median transversal band, smooth, dry, 30–45 × 15–23 µm.

ADDITIONAL SPECIMENS EXAMINED: **BRAZIL, MATO GROSSO STATE**, Novo Mundo, 9°28′06″S 55°50′36″W, on decaying wood, 29.XI.2016, coll. G.C.K. Barbosa (CNMTf 78); 3.XII.2015, coll. G.C.K. Barbosa (CNMTf 79).

COMMENTS—*Beltraniomyces pulcher* is separated from *B. lignicola* and *B. panthericolor* by its apically rounded or subobtuse conidia and larger conidiophores, with the conidia distinguished by acute apices in *B. lignicola* (Manoharachary & al. 2003) and subulate to mucronate in *B. panthericolor*. *Beltraniomyces pulcher* also lacks the distinctive leopard-like coloration found in *B. panthericolor.*

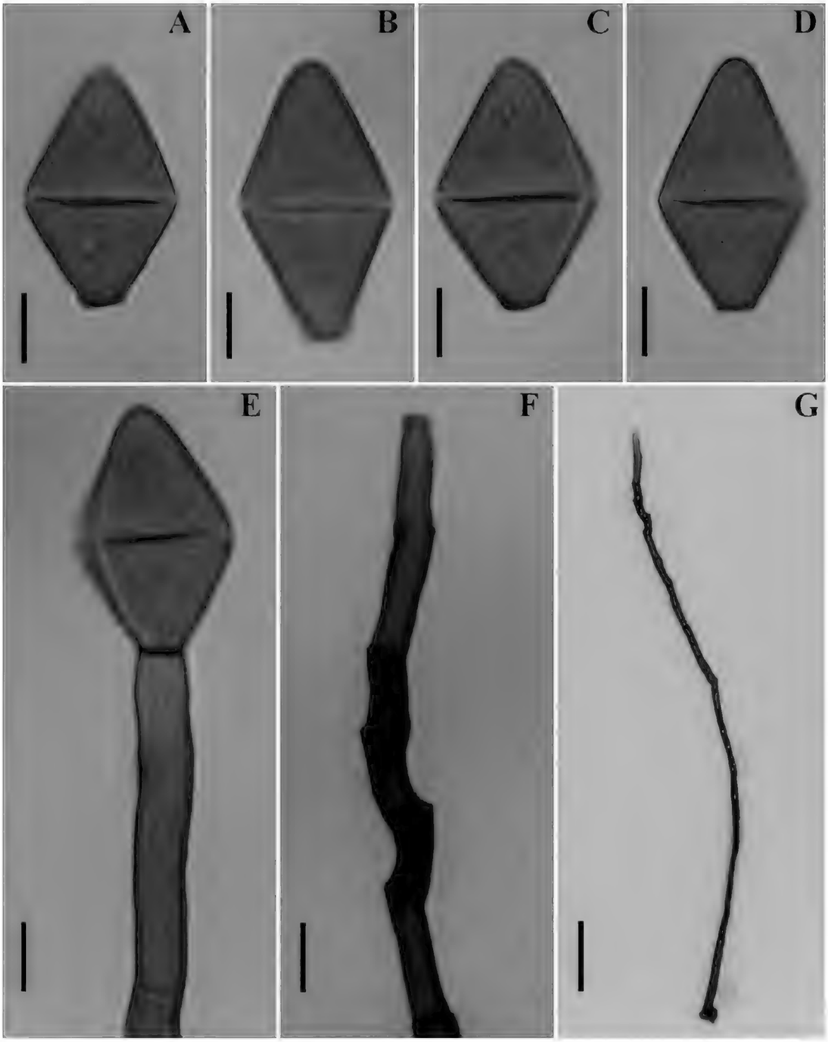

Fig. 2. *Beltraniomyces pulcher* (holotype, CNMTf 77). A–D. Conidia; E. Conidiogenous cell and conidium; F. Conidiogenous cells; G. Conidiophore. Scale bars: A–E = 10 µm; F = 25 µm; G = 90 µm.

Key to *Beltraniomyces* species

1. Conidia with multiple smoky or gray-brown spots, subulate to mucronate apex, cuneiform base	*B. panthericolor*
1. Conidia not as above	2
2. Conidia with acute apex, 31–38.5 × 19–24 µm	*B. lignicola*
2. Conidia with rounded to subobtuse apex, 30–45 × 15–23 µm	*B. pulcher*

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